Subcutaneous abscess caused by extended-spectrum β-lactamase-producing Salmonella senftenberg in a type 2 diabetic—a case report

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Salmonella organisms occur worldwide and are responsible for a broad spectrum of clinical syndromes, including self-limited gastroenteritis, bacteremia and vascular infection, enteric fever, and metastatic focal infections, although infection may be asymptomatic. Here we report a case of subcutaneous abscess caused by multiresistant Salmonella senftenberg.

A 62-year-old obese female presented with swelling of 15 days' duration with multiple ulcers in the left lower limb. She had suffered intermittently with the same symptoms for 4 years, and had been diagnosed and operated on for varicose veins (left saphenofemoral junction ligation with great saphenous vein stripping and bilateral below-knee perforator ligation) in the same hospital 18 months previously. She had been a known type 2 diabetic patient for 8 years, and was on mixtard insulin twice daily (9 and 4 units). Local examination revealed diffuse, tender swelling, with multiple blebs and ulcers occupying the upper and lateral two-thirds of the left lower limb. Laboratory investigations done at the time of admission were within normal limits, except for a random blood glucose level of 480 mg/dL.

S. senftenberg was isolated from the aspirated pus of the subcutaneous swelling. The isolate was an extended-spectrum β-lactamase (ESBL) producer by double disk synergy test, and was sensitive to trimethoprim-sulfamethoxazole, amoxicillin-clavulanic acid and imipenem by the Kirby-Bauer disk diffusion method. Urine and blood cultures were sterile. Stool and repeat pus culture yielded S. senftenberg with a similar antibiotic susceptibility pattern. The Widal test was negative. The patient recovered well after specific antibiotic treatment, skin graft to close the wound, and diabetic management.

There is a tendency for Salmonella species to localize in injured or damaged tissue or in sites of malignancy. In the present case, the patient was diabetic and probably a carrier of S. senftenberg, with varicose veins, suffering from repeated attacks of pruritic purulent dermatitis of the left lower limb, for which she was operated on. Previous trauma at the operative site is a risk factor, suggesting that hematomas may serve as a nidus for bacteremic seeding. Perhaps operative trauma would have acted as the predisposing factor in the present case. In one series, patients with Salmonella soft tissue infections had pustular dermatitis or subcutaneous abscesses, while in another series, most patients had underlying illnesses, such as malignancies, diabetes, transplants, burns, or sickle-cell disease.

S. senftenberg is an uncommon serotype and was first isolated in 1928. Recently, its increasing rate of isolation from human sources has suggested that it is an important pathogen. A study in India, conducted between January 1994 and 1998, reported an 11.1% isolation rate of S. senftenberg from stool samples from gastroenteritis patients. Although hospital outbreak reports have been documented, we did not encounter any other cases with S. senftenberg in our hospital. ESBLs are also rarely associated with the genus Salmonella. The first report of SHV-5 β-lactamase in S. senftenberg from India came from an outbreak in a burns ward. Although our isolate was an ESBL producer (phenotypic confirmation) with multiresistance, we could not determine the type of ESBL. S. senftenberg infections, although rare, have recently been increasing in frequency in India. Perhaps isolation of an ESBL-producing Salmonella strain should warn us of the possibility of S. senftenberg, and a possible outbreak in the hospital.

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REFERENCES


